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# Natural Gas R&D Program Initiatives on Targeted Decommissioning

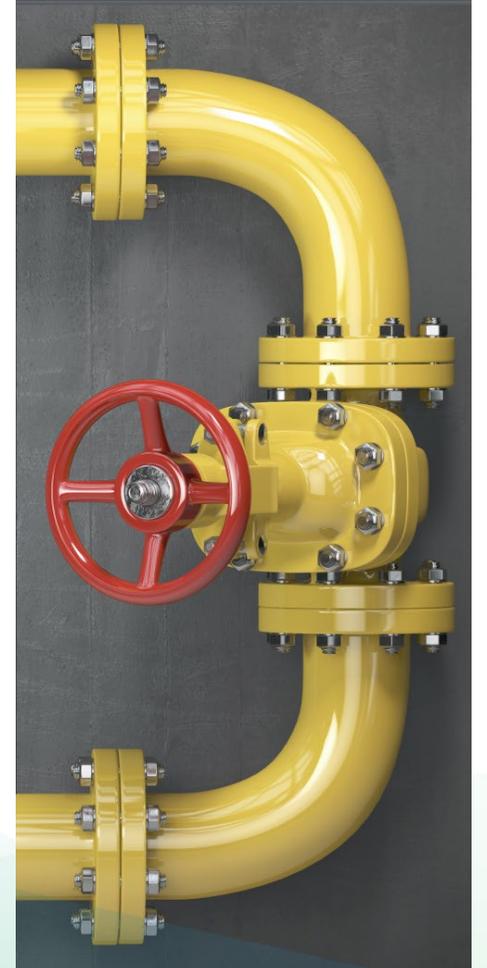
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May 20, 2021



# Outline

1. Natural Gas R&D Program
2. Study of Gas System Transition in Low-Carbon Future
3. R&D Initiatives for Targeted Decommissioning
  - a. Data-Driven Tool
  - b. Location-Specific Analysis





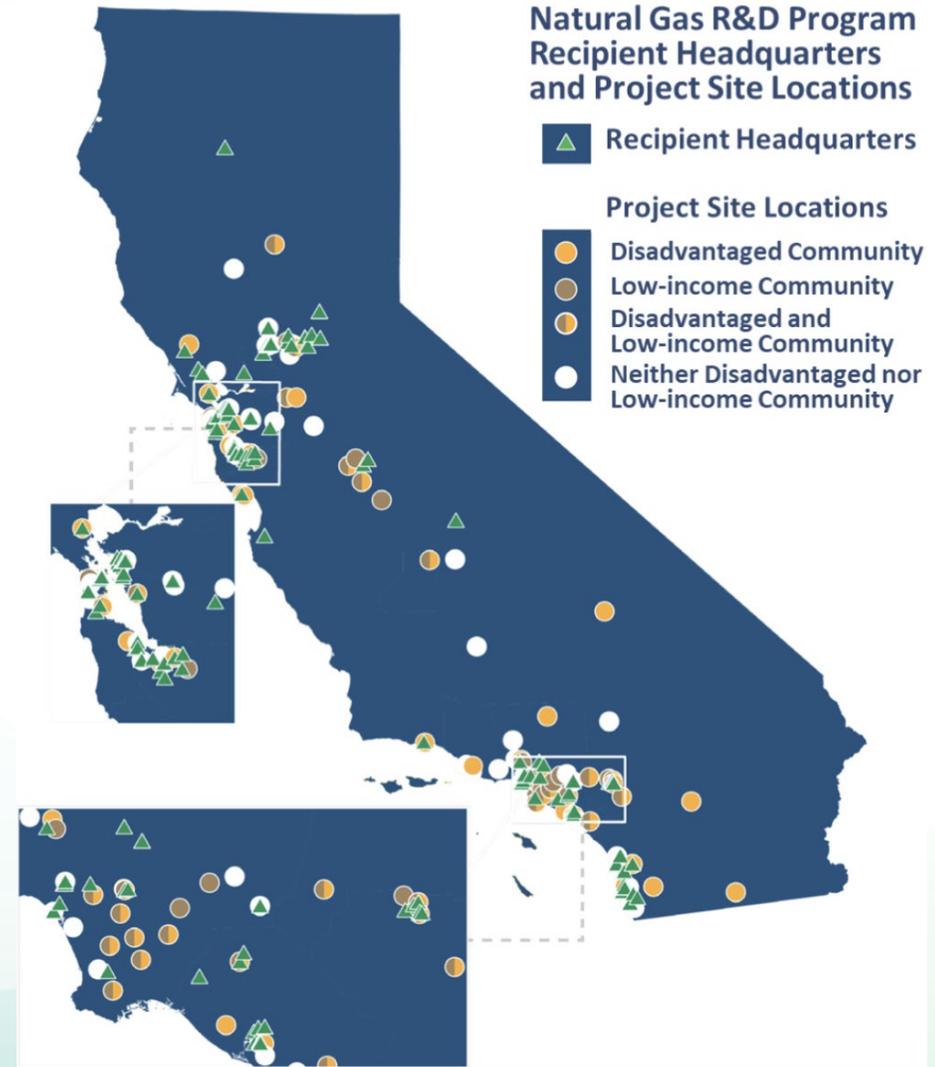
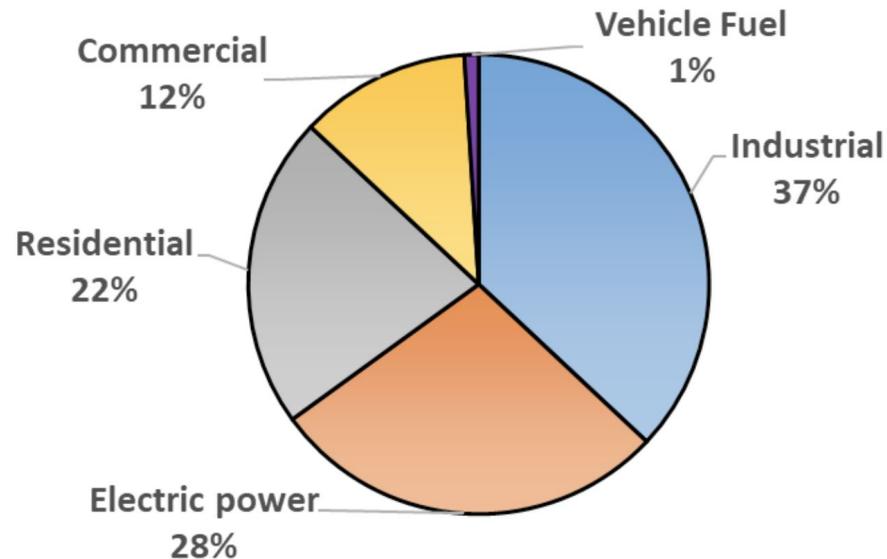
# Natural Gas R&D Program



# Natural Gas R&D Program

- Public interest R&D advancing **decarbonization, safety, equity**
- Implements state policy, CPUC R&D guidance
- \$24M/year funding
- Project summaries: [innovation.energy.ca.gov](http://innovation.energy.ca.gov)

Natural Gas Use in California by Sector (2019)



Source: FY21-22 Natural Gas R&D Program Budget Plan



# Natural Gas R&D Program

## Example Initiative Topics in 2020-21 Budget

- Renewable gas production (biomethane, hydrogen)
- Hydrogen fuel cell trucks and buses
- Pipeline and storage inspection and corrosion prevention
- **Data-driven tool for strategic decommissioning**

## Example Initiative Topics in 2021-22 Budget

- Hydrogen-based power generation
- Pollutant exposure from cooking in multi-family homes
- Industrial carbon capture and utilization
- **Location-specific analysis of decommissioning**





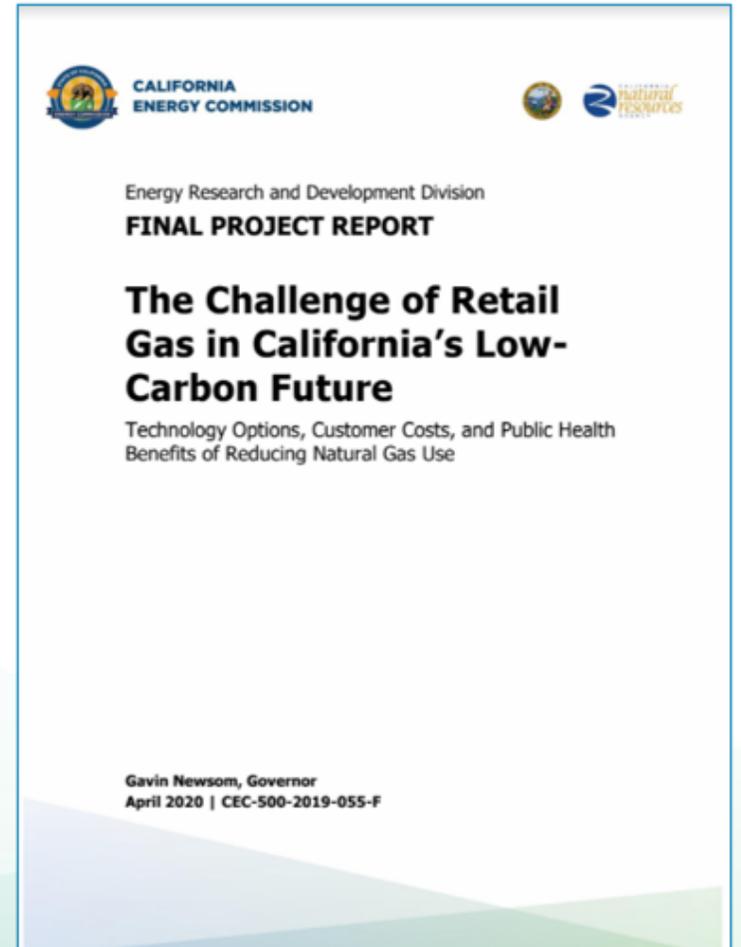
# **Study of Gas System Transition in Low-Carbon Future**



# Study of Gas System Transition in Low-Carbon Future

- **Building electrification is a key low cost and low risk strategy** for meeting climate goals.
- **Building electrification** reduces building sector emissions, providing **path to economy-wide carbon neutrality**.
- **While relatively costly, renewable gas is important for decarbonization**, particularly for **hard-to-electrify** cases (e.g., in industry, trucking).
- **Need to address feedback loop** that could push up gas rates for customers remaining on the gas system.
  - Drivers include: **aging gas infrastructure, economic electrification, demand reductions**.

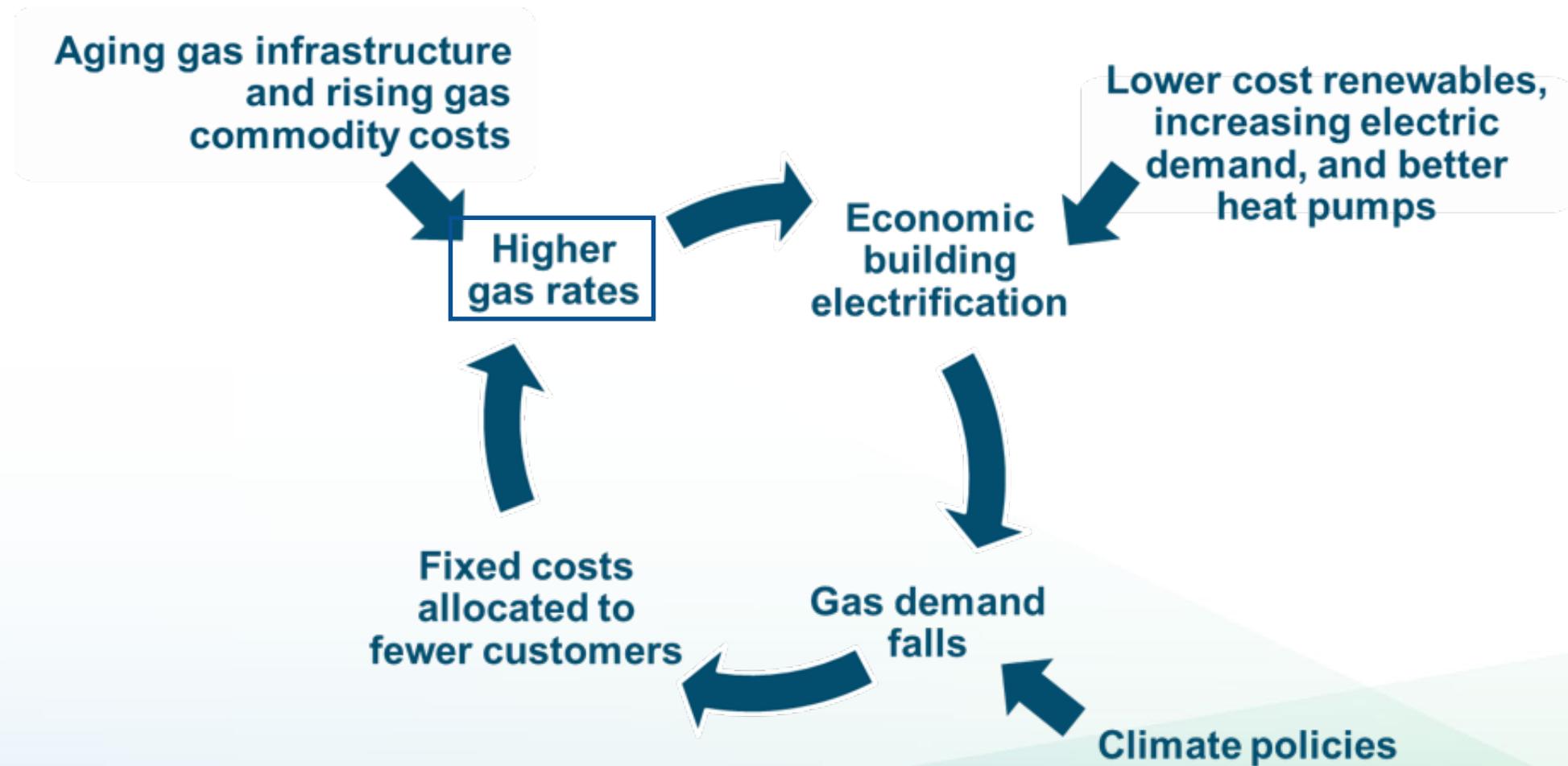
*Report underscores the **imperative of a managed transition to achieve climate goals at low societal and customer cost, with attention to equity.***



<https://ww2.energy.ca.gov/2019publications/CEC-500-2019-055/index.html>



# Feedback Loop in Gas System Transition



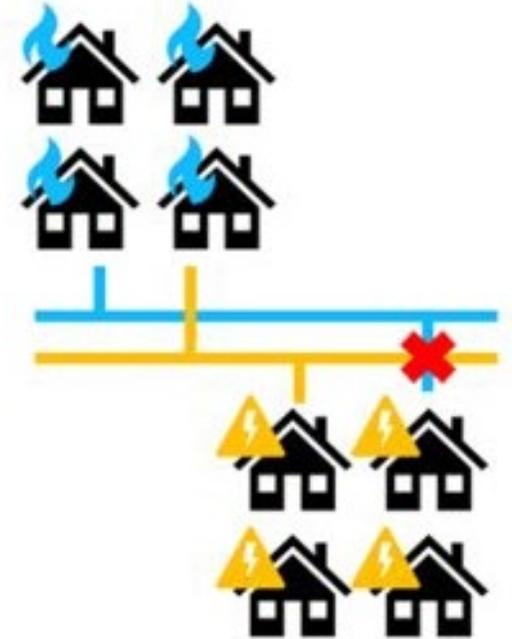


# **R&D Initiatives for Targeted Decommissioning**



# Data-Driven Tool: Strategic, Cost-Effective, Equitable Decommissioning

- Develop **data-driven tool** that screens for **promising sites** for decommissioning.
- Evaluate and select **criteria** to **identify promising sites**, leveraging early pilots.
- Utilize data on **infrastructure characteristics** and **condition**.
- Provide **systematic approach** to evaluate decommissioning **opportunities** and **impacts**.



Source: E3, The Challenge of Retail Gas in California's Low-Carbon Future



# Benefits: Data-Driven Tool

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- Enhance capacity of state agencies for **strategic planning** and foster **open, collaborative planning processes** with utilities, communities, and other stakeholders.
- Enable **focused location-specific analysis** of decommissioning opportunities and **assessments of health, environmental, and economic benefits**.
- Inform strategies for **cost-effective, equitable transition** of gas distribution system in low-carbon future.



# Location-Specific Analysis to Support Gas System Planning

- Develop approach for **location-specific analysis** to assess the **technical feasibility** of decommissioning **candidate sites**.
- Examine the **operational implications** of decommissioning specific segments of the gas system.
- Analyze candidate sites in **under-resourced communities**, enabling equitable participation in early stages of gas system transition.



# Benefits: Location-Specific Analysis

- **Support reliability** and market stability by understanding operational implications of decommissioning.
- **Bridge gap** between **broad gas system planning** and **local gas system operations**.
- Inform strategies for **cost-effective, equitable transition** of gas distribution system in low-carbon future.



**Thank You**

